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34704 7590 02/16/2011 BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510				
EXAMINER HODGE, ROBERT W				
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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* SUNIL G. WARRIER,  
JEAN YAMANIS, SONIA TULYANI,  
and RAYMOND C. BENN

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Appeal 2010-004072  
Application 10/622,881  
Technology Center 1700

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Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

A. STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from an Examiner's decision finally rejecting claims 1-3, 6, 7, 9-12, and 24-26.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The subject matter on appeal relates to a seal assembly for a solid oxide fuel cell (SOFC) stack. Claim 1, reproduced below, is illustrative.

1. A seal assembly for a solid oxide fuel cell stack, comprising:

at least two fuel cells each comprising an electrolyte having a cathode layer on one side and an anode layer on the other side, and at least one bipolar plate between the at least two fuel cells, the at least two fuel cells and the bipolar plate collectively defining at least two fuel cell components having opposed surfaces; and

*a continuous fiber tow wrapped into a closed-loop structure forming a substantially gas impermeable seal between said opposed surfaces.*

App. Br., Claims Appendix (emphasis added).<sup>3</sup>

The only Examiner's rejection on appeal is the rejection of claims 1-3, 6, 7, 9-12, and 24-26 under 35 U.S.C. § 103(a) as unpatentable over the combination of Keegan<sup>4</sup> and Gottzmann.<sup>5</sup>

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<sup>2</sup> Claims 5, 8, and 13-21 are also pending. The Examiner has indicated that claim 5 is allowed, claim 8 is objected to as being dependent on a rejected base claim, and claims 13-21 are withdrawn from consideration. Final Office Action dated August 27, 2008.

<sup>3</sup> Appeal Brief dated August 10, 2009.

<sup>4</sup> US 2003/0215689 A1 published November 20, 2003.

<sup>5</sup> US 6,139,810 issued October 31, 2000.

B. ISSUE

The sole issue on appeal is whether the Examiner erred in concluding that it would have been obvious to one of ordinary skill in the art to substitute the seal of Keegan with “a continuous fiber tow wrapped into a closed-loop structure” in view of the teachings of Gottzmann.

C. DISCUSSION

The Examiner finds that Keegan discloses a seal member 80 for a solid oxide fuel cell stack but finds that “Keegan does not teach that the seal is a continuous fiber seal” as recited in the claims on appeal. Ans. 3.<sup>6</sup> The Examiner finds that Gottzmann discloses a solid oxide tube and shell reactor wherein the solid oxide tubes are sealed with a continuous fiber tow wrapped into a closed loop structure which forms a substantially gas impermeable seal, i.e., sliding seals 48 and 50. Ans. 3.

The Examiner concludes that it would have been obvious to one of ordinary skill in the art to substitute the seal member of Keegan with the seal of Gottzmann to “prevent any of the reactant gases from leaking out of the stack thus preventing any explosion hazards.” Ans. 4.

The Appellants argue that Gottzmann “contains teaching concerning the seal that make the seal incompatible with the teachings of Keegan.” App. Br. 9. In particular, the Appellants argue that the seal of Gottzmann is a sliding seal and there is nothing in Keegan or Gottzmann that would lead one of ordinary skill in the art to believe that the sliding seal of Gottzmann could be incorporated into Keegan with any expectation of success. App. Br. 11.

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<sup>6</sup> Examiner’s Answer dated September 29, 2009.

The Appellants' argument is supported by the record. In particular, Keegan discloses:

In order for the electrochemical cell 10 to function properly, a pressure tight seal which can be disposed between the flow plate 25 and the remainder of the fuel cell is required to ensure oxidant and fuel flow to the anode and cathode, (as appropriate), and to prevent mixing of the two streams. . . . [T]o ensure a pressure tight seal, seal member 80 is capable of withstanding the pressures, temperature, and chemical environment within an operating SOFC.

Keegan, para. [0037].

Gottzmann, on the other hand, discloses:

The seal areas preferably are maintained at moderate temperatures of between about 250° C. and 650° C. These relatively low temperatures, and the requirement that the sliding seals have to seal only against a small pressure differential and the fact that moderate leak rates can be tolerated by the process of the invention creates considerable degrees of freedom in seal selection.

Gottzmann 9:56-62; *see also* Gottzmann 10:42-44 (“[s]ubstantial leaks about seals 48 can be tolerated”).

This disclosure in Gottzmann undermines the Examiner's motivation for combining the teachings of Keegan and Gottzmann, i.e., to “prevent any of the reactant gases from leaking out of the stack thus preventing any explosion hazards.” Ans. 4. Significantly, the Examiner has not directed us to any evidence establishing that the seals 48 and 50 disclosed in Gottzmann would have been a suitable substitute for the seal member 80 disclosed in Keegan. Therefore, we cannot sustain the § 103(a) rejection on appeal.

D. DECISION

The decision of the Examiner is reversed.

REVERSED

sld

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